Amendments to the Claims

Please amend claims 1, 8, 13, 15, 16, and 18 and add new claim 20 as follows:

1. (CURRENTLY AMENDED) A mass flow controller, comprising:

a body portion having a first internal passage and ~~at least~~ a second internal passage formed therein;

a flow control valve coupled to the body portion and in communication with the first and second internal passages;

at least one pressure transducer coupled to the body portion and in communication with at least one of the first ~~internal passage and the second internal passage~~ and second internal passages;

a nonlinear flow restrictor coupled to the second internal passage and configured to produce a ~~high~~ highly compressible laminar flow therethrough ~~coupled to the second internal passage;~~

~~a thermal sensor in communication with at least one of the first internal passage, the second internal passage, and the flow restrictor;~~ and

an exhaust vessel in communication with the flow restrictor.

2. (ORIGINAL) The device of claim 1 wherein the second internal passage is configured to flow a fluid at a pressure greater than a pressure at an output of the flow restrictor

3. (ORIGINAL) The device of claim 1 wherein exhaust vessel is under vacuum.

5. (ORIGINAL) The device of claim 1 wherein exhaust vessel is under near vacuum

6. (ORIGINAL) The device of claim 1 wherein exhaust vessel is under pressure drop of about 0 psia to about 5 psia.

7. (ORIGINAL) The device of claim 1 wherein the flow restrictor is manufactured from a compressed and sintered material.

8. (CURRENTLY AMENDED) The device of claim 1 wherein the flow restrictor is porous.

9. (ORIGINAL) The device of claim 1 wherein the flow restrictor comprises a coiled capillary tube.

10. (ORIGINAL) The device of claim 1 wherein the flow restrictor is positioned downstream of the flow control valve.

11. (ORIGINAL) The device of claim 1 wherein the flow restrictor is configured to enable a pressure drop between a flow restrictor inlet and a flow restrictor outlet of a highly compressible laminar flow of at least 50 percent.

12. (ORIGINAL) The device of claim 1 further comprising at least one pressure transducer in communication with an outlet of the flow restrictor.

13. (CURRENTLY AMENDED) A mass flow controller, comprising:

~~one or more pressure sensors;~~

~~an upstream~~ a flow control valve;

a pressure transducer positioned downstream of the flow control valve; and

a nonlinear restrictor with an inlet and an outlet and positioned downstream of ~~the valve and~~ the pressure sensor and configured to have ~~a more~~ an incremental pressure per unit of flow at ~~an inlet of the restrictor~~ the inlet at low flows.

14. (ORIGINAL) The device of claim 13 wherein the restrictor comprises a laminar flow element configured to produce a highly compressible laminar flow therethrough.

15. (CURRENTLY AMENDED) The device of claim 13, wherein the restrictor is configured to provide a pressure drop between ~~a restrictor~~ the inlet and ~~a restrictor~~ the outlet of at least about 50% ~~of the pressure at an inlet of the flow restrictor~~.

16. (CURRENTLY AMENDED) The device of claim 13 wherein the restrictor ~~is~~ comprises ~~a~~ an elongated capillary body having a small hydraulic diameter.

17. (ORIGINAL) The device of claim 13 wherein the restrictor comprises a sintered body.

18. (CURRENTLY AMENDED) The device of claim 13 wherein the restrictor comprises a porous body having pores formed in parallel and series ~~formed~~ thereon.

19. (ORIGINAL) The device of claim 13 wherein the restrictor is formed in a variety of configurations selected from the group consisting of capillary tubes, annular gaps, annular plates, parallel plates, grooved plates, stacked plates, coiled capillary bodies, and coiled sheets.

20. (NEW) The device of claim 14 wherein the restrictor is configured to enable a pressure drop between the inlet and the outlet of a highly compressible laminar flow of at least 50 percent.